Hatchery 08
Article 16

FEDERAL AID
IN
FISH RESTORATION

STATE OF: Idaho

PROJECT NO: F-75-R-3

SUBPROJECT NO. 2: Coldwater Fish Investigations STUDY

NO. 2: Henrys Lake Hatchery Enhancement

JOB NO. 1: Trap and Spawn Cutthroat, Hybrids, and Brook Trout

JOB NO. 2: Develop Techniques to Improve Sterile Hybrid Survival

JOB NO. 5: Evaluate Various Spawning Techniques and Chemical Treatments on Egg Survival

JOB TITLE: Henrys Lake Fishery Enhancement

PERIOD COVERED: July 1, 1987 to June 30, 1988

September 1988

HENRYS LAKE HATCHERY

Annual DJ Report

ABSTRACT

During 1988, an estimated 207000 cutthroat and 3,000 cutthroat—rainbow hybrids ascended the ladder at Henrys Lake Hatchery resulting in the collection of 2.79 million eggs. Preserved rainbow trout sperm was crossed with approximately 658,000 of these eggs to produce three different hybrid strains. Fall trapping operations on Timber Creek, Duck Creek and at the hatchery ladder produced 305,000 eggs from two strains of brook trout. During the fall of 1987, over one million cutthroat, 225,000 hybrids, and 150,000 brook trout fingerlings were stocked into Henrys Lake.

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INTRODUCTION

Henrys Lake Hatchery is located on highway 87 about 50 miles (80 km) north of Ashton, Idaho in the Island Park area. Hatchery buildings include a spawnhouse, hatchery—office—garage complex, one permanent residence, and a patrol cabin. The hatchery superintendent resides at the hatchery during the entire year, and the patrol cabin functions as temporary housing for a seven month technician.

Approximately 1 CFS of water for hatchery operation is obtained from Hatchery Creek, a small spring fed tributary to Henrys Lake. This water is gravity fed to all hatchery buildings and an outdoor rearing pond at a constant temperature of 45°F (7.2°C).

Egg incubation facilities include 10 Heath incubator stacks (16 trays per stack) with inflows adjusted to 6 GPM per stack. Fry rearing facilities include three 2,000 gallon capacity concrete starter vats (250 GPM inflow), and a shallow dirt—bottom pond. Due to the limited water supply and its relatively cold temperature no fish are reared on station. All eyed eggs are transferred to other hatcheries for rearing purposes.

OBJECTIVES

1. To obtain a sufficient number of cutthroat $_{eggs}$ to provide a return of one million fingerlings to the lake the following fall.
2. To take a sufficient number of cutthroat eggs to cross with rainbow trout milt to provide 250,000 hybrid fingerlings for return to the lake the following fall.
3. To take sufficient numbers of temiscamie brook trout eggs to provide a return of 100,000 fingerlings the following fall.

FISH PRODUCTION

Brook trout were trapped and spawned at Duck Creek, Timber Creek, and at the hatchery during the fall of 1987 with a large percentage of the hatchery run being temiscamie strain. During this period a total of 127,000 generic brook trout, and 178,000 temiscamie brook trout eggs were collected.

During the 1988 spring spawning run approximately 20,000 cutthroat and 3,000 hybrids ascended the fish ladder at Henrys Lake Hatchery. Spawning operations this year resulted in the collection of 2,790,613 cutthroat eggs. Approximately 657,725 of these eggs were crossed with preserved rainbow trout sperm produce three different hybrid trout strains. No eggs were collected from the F1 generation hybrids.

Cutthroat eggs eyed-up at 82%, but success with hybrid eggs was as low as 60% (table 1). Brook trout eggs averaged 72% eye-up, but the temiscamie strain was considerably less than the generic brook trout (table 1). Eggs were shipped to Ashton and Mackay hatcheries for hatching and rearing, with excess brook trout eggs being shipped to Clark Fork Hatchery for northern Idaho mountain lake plants.

A total of 1,409,036 fish were planted back into Henrys Lake during 1987. This total was comprised of 1,003,332 cutthroat, 255,540 cutthroat-rainbow hybrids, and 150,164 temiscamie brook trout (table 2).

Table 1. Spawning summary 1987-1988

Species	Green eggs	Eyed eggs	% eye-up
BK (generic)	127,000	99,976	78
BK (temiscamie)	178,000	120,473	68
C3	2,132,888	1,754,378	82
C3XK1 (normals)	340,000	204,000	60
C3XK1 (hormone)	93,333	56,000	60
C3XR6	224,392	147,000	65
Total	3,095,613	2,381,827	77

Table 2. Henrys Lake fall plant 1987

Species	Source	Number	Size(#/lb)	Total
C3	Mackay	663,390	122	
C3	Henrys Lake	339,942	156	1,003,332
C3XR7	Mackay	25,200	63	
C3XRedband	Mackay	22,050	63	
C3XKamloop &Redband	Mackay	105,000	140	
C3XK1	Mackay	103,290	83	255,540
BK(temisc/amie)	Ashton	150,164	66	150,164